



Data Paper

Geographic review on the specimens of the Caatinga Biome in the Jardim Botânico do Rio de Janeiro (RB) herbarium

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Abstract

Background

This article provides a quantitative description of flora specimens stored in the Jardim Botânico of Rio de Janeiro Herbarium that belongs to the Federal Conservation Units of Caatinga's phytogeography domain. The Caatinga represents 11% of Brazilian territory and is, in South America, the largest and most biodiverse semi-arid tropical ecoregion, yet only 5% of its territory is covered by Federal Conservation Units, with few collections of flora samples. Thus, providing a georeferenced inventory of existing collections is essential for purposes of species distribution, environmental management and conservation. The aim of this data paper is to gauge, by means of geographic coordinates correction and retrieval of the flora specimens present in the RB Herbarium, the amount of specimen gatherings performed in the Federal Conservation Units belonging to the Caatinga domain.

New information

Currently, the RB data is publicly available online at several biodiversity portals, such as our institutional database JABOT, the Reflora Virtual Herbarium, the SiBBr and the GBIF portal (Lanna et al. 2019). However, a description of the dataset that belongs to the Federal Conservation Units of Caatinga's phytogeography domain as a whole is not yet available in the literature.

Keywords

Caatinga domain, Federal Conservation Units, Flora samples

Introduction

The Caatinga phytogeographic domain is South America's largest and most biodiverse tropical semi-arid ecoregion (Moro et al. 2016). It occupies interplanaltic depression areas northeast and northwards of Minas Gerais state in Brazil (Ab'Saber 2007) and is distributed along an estimated area of 844,000 km². Originally, the biome represented 11% of the Brazilian territory (Ministério do Meio Ambiente 2018). Although the diversity of plants and animals may be considered low when compared with other regions (e.g. tropical forests), the biological patrimony in this region is adapted to the local extreme conditions, resulting in high endemism rates (Queiroz et al. 2017).

Caatinga encompasses woody vegetation that is thorny and deciduous (Ab'Saber 1974) and can be divided into 12 types according to abiotic variations of altitude, continentality and soil features (Alves et al. 2008, Araújo et al. 2005). This biome is facing continuous deforestation processes related to wood extraction, farming and agriculture (Ribeiro et al. 2015, Marinho et al. 2016), which generates negative effects on biodiversity, such as habitat loss and fragmentation (Antongiovanni et al. 2018) and desertification (Hauff 2010).

Conservation Units are defined as territorial spaces protected by public or private initiatives in order to promote biodiversity conservation, restoration and management, as well as to protect natural resources while encompassing extractivism and sustainable uses. In Brazil, the National System of Conservation Units (Brasil 2011) separates Conservation Units into two conservation groups and some categories of preservation. The Full Protection Units group targets nature preservation in a restrictive way, accepting only indirect use of its natural resources. On the other hand, the Sustainable Use Units aim to reconcile nature conservation and sustainable uses.

Less than 5% of Caatinga's territory is currently covered by Conservation Units (CU) (Oliveira et al. 2013), whereas 30% of its typical biodiversity occurs entirely outside of protected areas, which promotes gaps in the protection, research and management of flora species (Fonseca and Venticinque 2018). It is estimated that at least 4,843 species of